Ordering number : EN7519A

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

NPN Epitaxial Planar Silicon Transistor

50C02SS — Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency Amplifer, high-speed switching small motor drive, muting circuit

Features

- Large current capacity
- Low collector-to-emitter saturation voltage (resistance) : R_{CE}(sat) typ=175mΩ[I_C=0.5A, I_B=50mA]
- Ultrasmall package facilitates miniaturization in end products
- Small ON-resistance (Ron)

Specifications

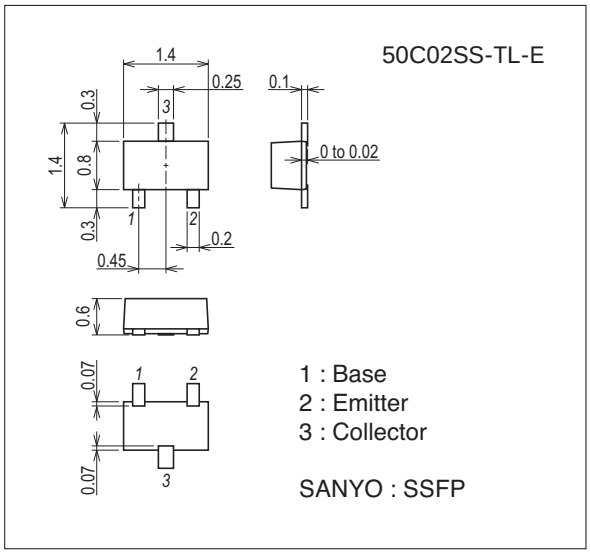
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		400	mA
Collector Current (Pulse)	I_{CP}		800	mA
Collector Dissipation	P_C	Mounted on a glass-epoxy board (20×30×1.6mm)	200	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Package Dimensions

unit : mm (typ)

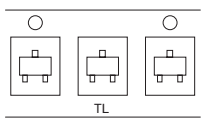
7029A-002



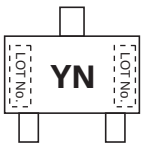
Product & Package Information

- Package : SSFP
- JEITA, JEDEC : SC-81
- Minimum Packing Quantity : 8,000 pcs./reel

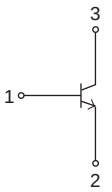
Packing Type: TL



Marking



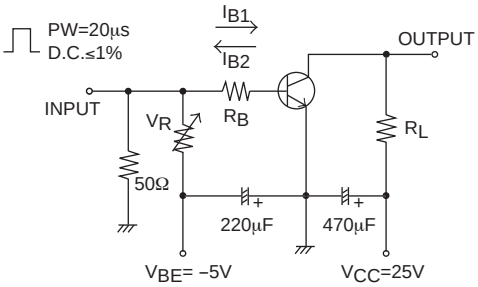
Electrical Connection



Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=40V, I_E=0A			100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			100	nA
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=10mA	300		800	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		500		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		2.8		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=100mA, I_B=10mA		50	100	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=100mA, I_B=10mA		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0A	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0A	5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}			340		ns
Fall Time	t_f			55		ns

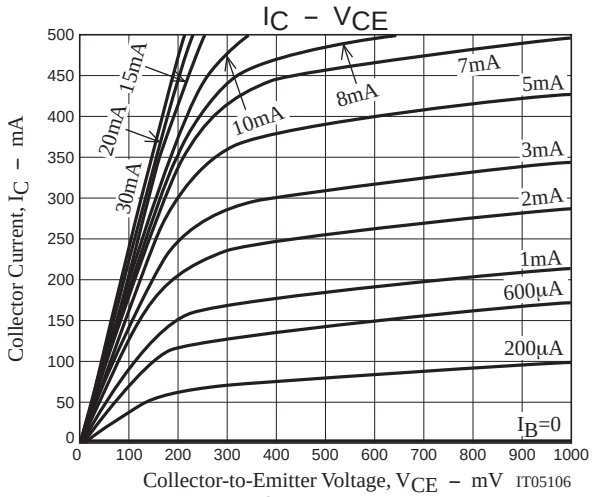
Switching Time Test Circuit

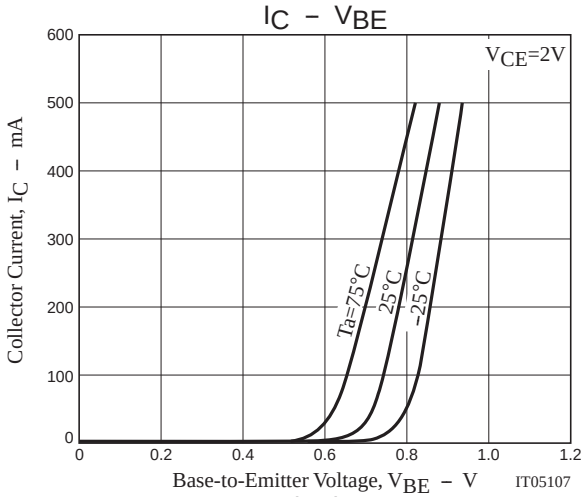


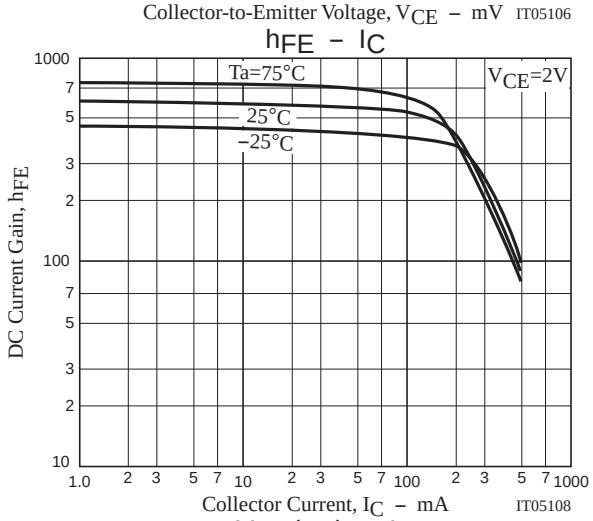
I_C=20I_{B1}= −20I_{B2}=200mA

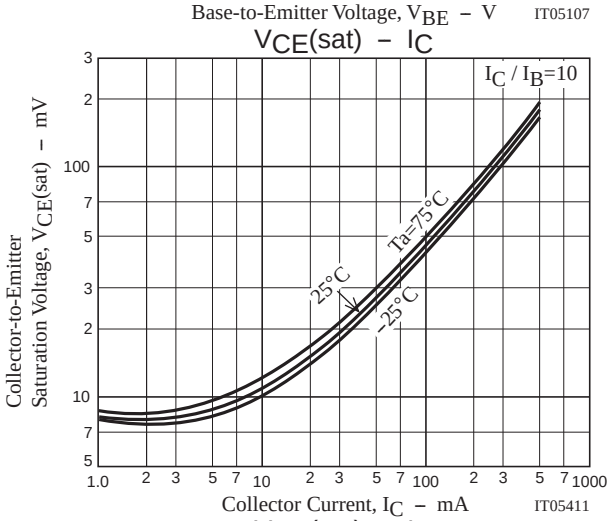
Ordering Information

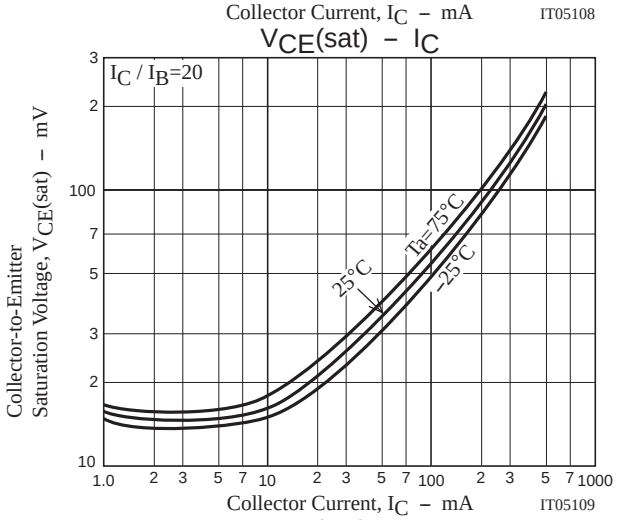
Device	Package	Shipping	memo
50C02SS-TL-E	SSFP	8,000pcs./reel	Pb Free

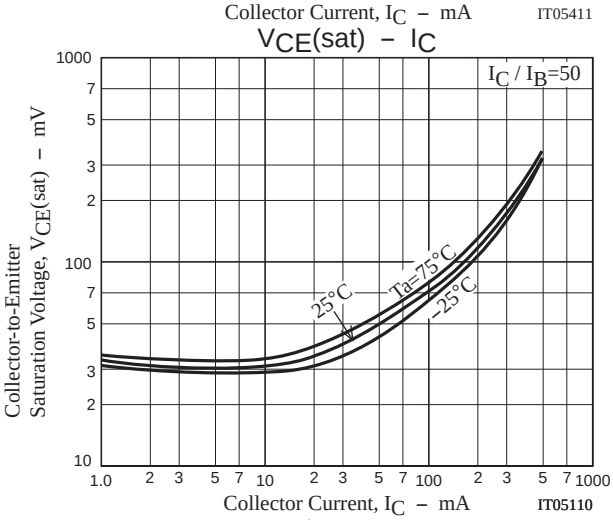

IC – VCE
Collector Current, IC – mA
Collector-to-Emitter Voltage, VCE – mV
IT05106
IB=0
200μA
600μA
1mA
2mA
3mA
5mA
7mA
8mA
10mA
15mA
20mA
30mA

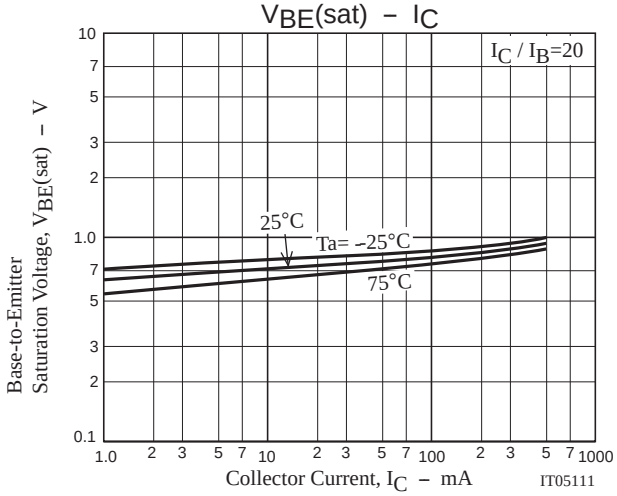

IC – VBE
Collector Current, IC – mA
Base-to-Emitter Voltage, VBE – V
IT05107
VCE=2V
Ta=75°C
25°C
–25°C

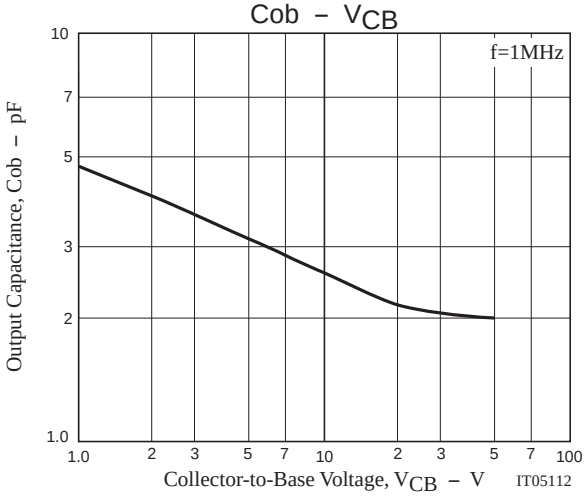

hFE – IC
DC Current Gain, hFE
Collector Current, IC – mA
IT05108
VCE=2V
Ta=75°C
25°C
–25°C

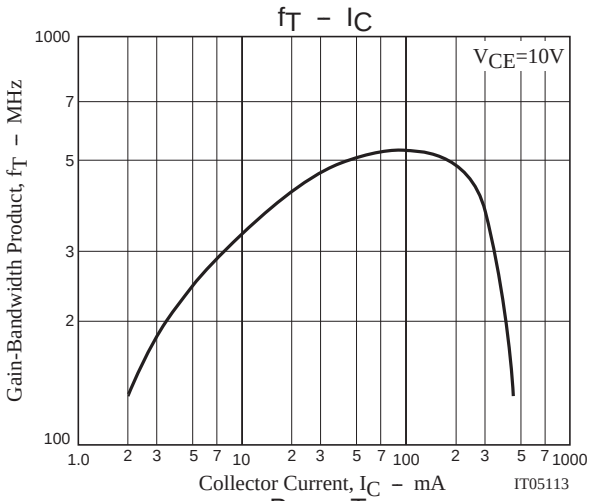

VCE(sat) – IC
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
IT05411
IC / IB=10
Ta=75°C
25°C
–25°C

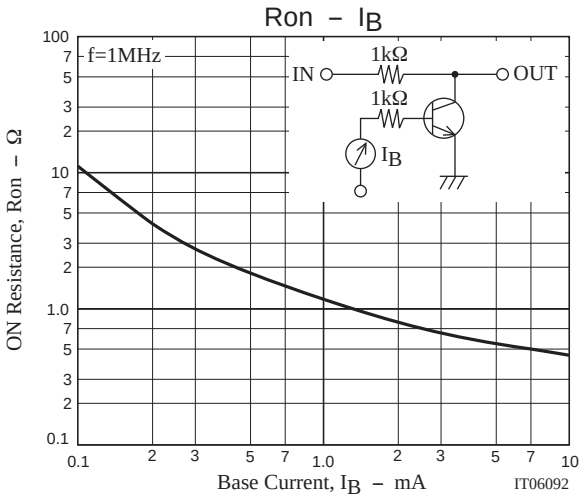

VCE(sat) – IC
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
IT05109
IC / IB=20
Ta=75°C
25°C
–25°C

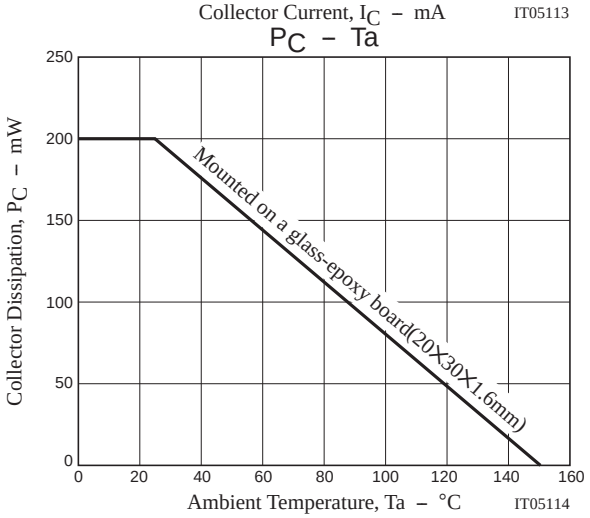

VCE(sat) – IC
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
IT05110
IC / IB=50
Ta=75°C
25°C
–25°C


VBE(sat) – IC
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – mA
IT05111
IC / IB=20
25°C
Ta= –25°C
75°C


Cob – VCB
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT05112
f=1MHz


fT – IC
VCE=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
IT05113


Ron – IB
f=1MHz
1kΩ
IN
OUT
1kΩ
IB
ON Resistance, Ron – Ω
Base Current, IB – mA
IT06092


PC – Ta
Mounted on a glass-epoxy board(20X30X1.6mm)
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
IT05114

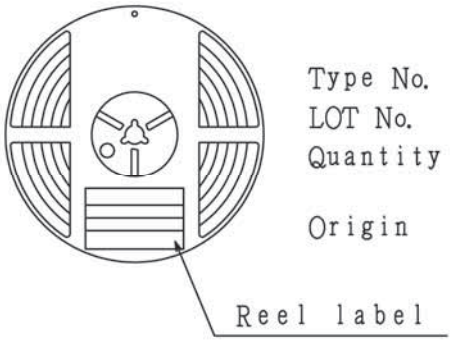
Embossed Taping Specification

50C02SS-TL-E

1. Packing Format

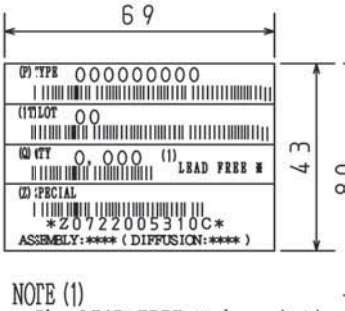
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
SSFP	SSFP	8,000	40,000	240,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



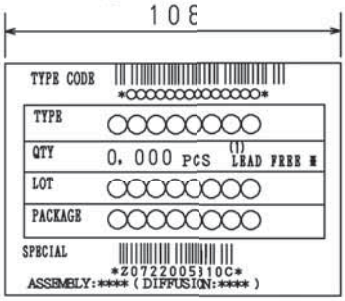
Reel label, Inner box label

(unit:mm)



Outer box label

It is a label at the time of factory shipments. The form of a label may change in physical distribution process.

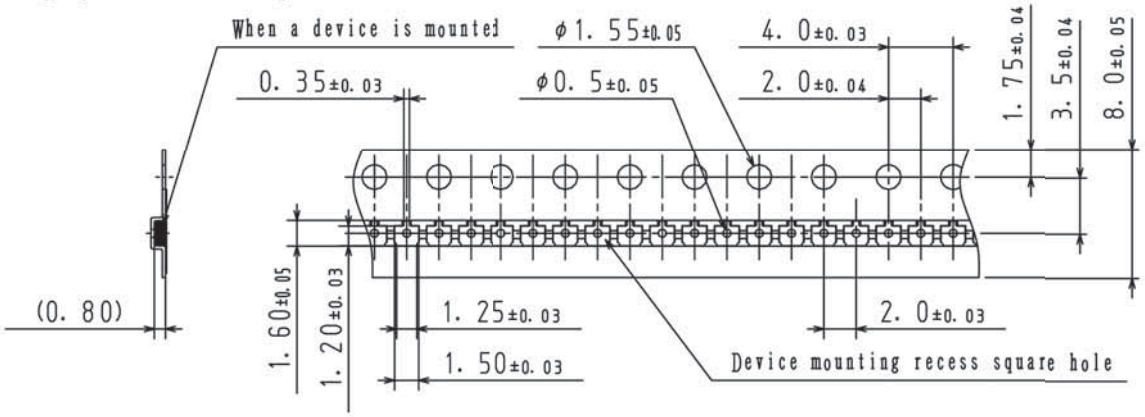


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

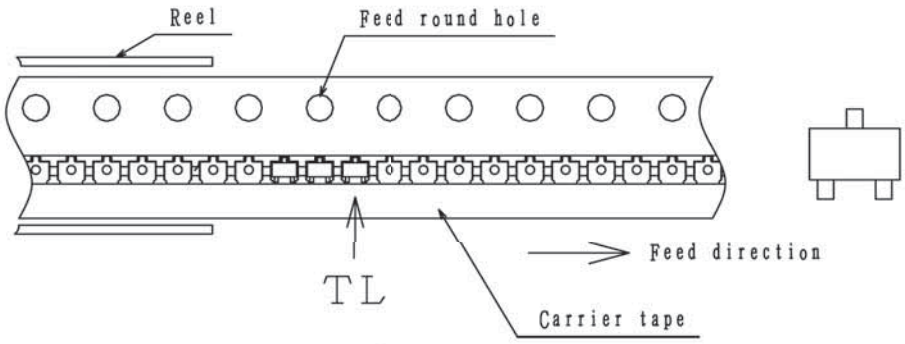
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



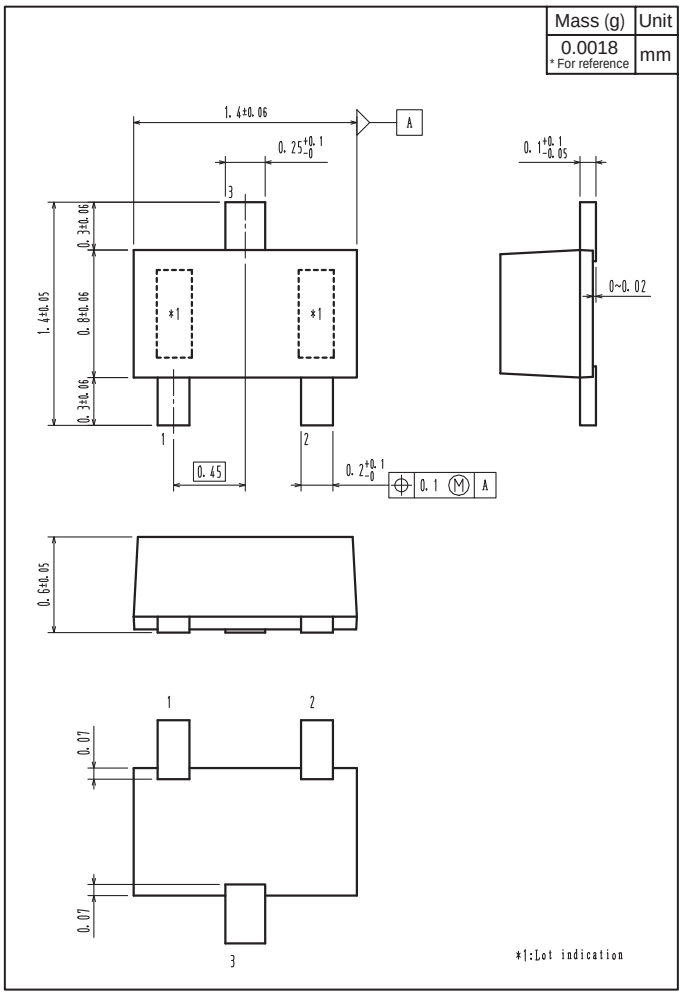
2-2. Device placement direction



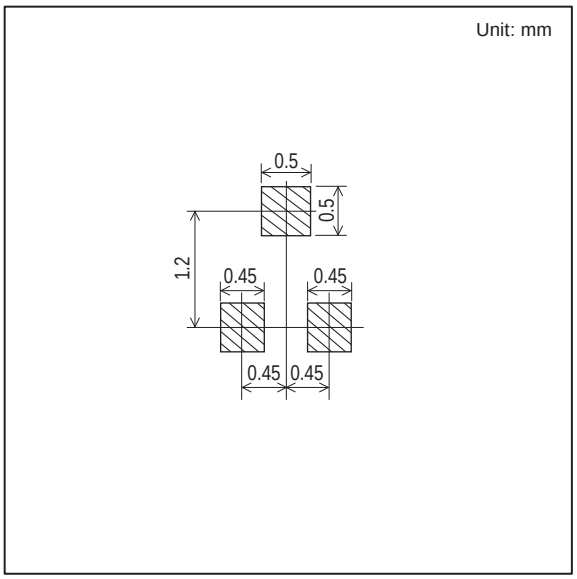
Those with pin 1 index on the feed hole side·····TL

Outline Drawing

50C02SS-TL-E



Land Pattern Example



Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

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http://moschip.ru/get-element

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